

ABSTRACT**Electrode-Electrolyte Pair Based on Bismuth oxide, Fabrication Method
and Organogel**

5 This invention relates to the field of electric power generation by direct transformation of the chemical energy of gaseous fuel to electric power by means of high-temperature solid oxide fuel cells.

 The invention can be used for the fabrication of miniaturized thin filmed oxygen sensors, in electrochemical devices for oxygen extraction from air and in catalytic electrochemical devices for waste gas cleaning or hydrocarbon fuels conversion.

10 The technical objective of the invention is the production of a low-cost electrode-electrolyte pair having an elevated electrochemical efficiency as the most important structural part of a highly efficient, economically advantageous and durable fuel cell. Furthermore, the invention achieves additional objectives.

15 The achievement of these objectives is exemplified with two electrode-electrolyte pair designs and their fabrication methods, including with the use of a special organogel.